

REMARKS

Claims 1-8 were presented for examination and were pending in this application. In the latest Office Action, claims 1-8 were rejected. With this amendment, claim 8 is amended. On the basis of the following remarks, consideration of this application and allowance of all pending claims are requested.

Claim 8 was rejected as indefinite, in particular, on the ground that it was unclear what the claimed network system and packet-switching elements comprise. Claim 8 has been amended to recite that at least one of the network elements interconnected by the claimed network system is itself a network system. Claim 8 thus describes a hierarchical configuration in which the claimed network system interconnects one or more other network systems (i.e., where a network element is itself a network system). Accordingly, claim 8, as amended herein, is definite.

Claims 1, 3-6 and 8 were rejected as being anticipated by U.S. Patent No. 6,542,511 to Livermore et al.; claim 2 was rejected as being made obvious by Livermore in view of U.S. Patent No. 6,246,692 to Dai et al.; and claim 7 was rejected as made obvious by Livermore in view of U.S. Patent No. 6,631,128 to Lemieux. Applicant respectfully traverses this rejection.

The claims recite a network system comprising a set of nodes with variable capacity connections transporting data from the source nodes to the destination nodes of the network. In the claimed network system, the destination nodes of the connections directly control the capacities of the connections according to the data traffic loads of the connections. Livermore does not disclose (or suggest, in combination with Dai or Lemieux) the claimed network system for a number of reasons, at least some of which are provided below.

“the capacity of each connection controlled directly from its destination node”

Claim 1 recites that the capacity of each connection configured to transport data from its source node to its destination node within the network system is controlled directly by its destination node.

The Office Action cited column 3 lines 50-62 of Livermore for this feature. For convenience, that cited passage of Livermore is copied below (emphasis added):

“With lossless rings (traffic-wise), the quality of service is controlled solely by the source and destination nodes, without any interference from other data streams within the network. By reducing the complexity of the network core, an economical, reliable, and manageable network with feature-rich edge nodes can be realized.

In summary, a flexible programmable transport simplifies network management and extends the network capacity and network coverage by letting the end nodes control the QOS and end-to-end capacity allocation. Rather than forcing the network to cope with multiple protocols, node-pairs can communicate directly through adaptive end-to-end links.”

From this passage, it is seen that in Livermore, the connection capacities are not controlled directly from their destination nodes, as claimed. Instead, per Livermore, the QOS control (which the examiner equated to control of connection capacity) involves *node pairs*, which, per the cited passage, include *both end nodes* (of a link), i.e., also the ***source node***.

Livermore thus does not disclose a network system in which the connection capacities are controlled directly from their destination nodes. In addition to the above discussion regarding the cited passage, this is seen from Livermore, e.g., from the below excerpts (emphasis added):

Column 3, lines 45-48:

“The invention calls for a service rate calculation for each source-destination node pair which is carried out by a centralized or distributed controller.”

Column 4, lines 50-56:

“The network further includes the plurality of nodes located on the dual transport ring, [...] each node controlling a rate at which it inserts to the dual transport ring the amount of data in the containers destined to any of the remaining nodes.”

Column 5, lines 24-28:

“The method includes further steps of declaring each data stream eligible for transport when the parameter exceeds an allowed data rate of said data stream and transporting into the ring transport medium each eligible data stream in accordance with a predetermined criterion.”

Column 4, line 65, to column, 5 line 2:

“The node further includes [...] a rate scheduler for scheduling insertion of containers into the dual transport ring in accordance with an allowed rate approved by the communication network.”

According to the above excerpts, Livermore’s service rate control involves data insertion rate control performed by the node that is inserting the data to the transport ring — i.e., the source node for a given connection, not the destination node. In addition, Livermore’s service rate control involves a centralized network controller, or a distributed controlling scheme, and methods for declaring data streams eligible for transport and data insertion scheduling by source nodes (as described in the above-quoted excerpts, as well as the description of source node control in column 11, lines 44-57). This is further contrasted to the claimed invention, where the destination node of each connection directly controls its capacity.

That destination nodes do not control connection capacities in Livermore is also seen from the following additional excerpts (emphasis added):

Column 3 lines 21-23:

“A domain is defined where every networking device within the domain is connected to every other networking device within it with fixed or variable capacity. “

Column 7 lines 17-22:

“one of the nodes within the domain generates and allocates the multiplex containers, and indicates the length and alignment of each multiplex container by generating a multiplex container label (identifier). This node is referred to as the domain controller node.”

Column 7 lines 54-58:

“The container being inserted is addressed to another node and the amount of data units that can be inserted is either governed by the rate allocated by the domain controller node or determined according to a distributed rate allocation scheme.”

From these excerpts it is clear that data insertion (flow) rate control in Livermore is performed by a central network domain controller or by a distributed rate control scheme that involve data insertion control by the source nodes. Accordingly, Livermore does not disclose a network system in which the capacity of each connection is controlled directly from its destination node

Claims 1, 3-6, and 8 are therefore novel over Livermore. Moreover, because Livermore was applied to claims 2 and 7 in the same way as it was applied to claims 1, 3-6, and 8, and Dai and Lemieux were applied only for the additional dependent limitations found in claims 2 and 7, respectively, claims 2 and 7 are patentable over the cited references for at least the same reasons provided above.

Based on the foregoing, the application is in condition for allowance of all claims, and a Notice of Allowance is respectfully requested. If the examiner believes for any reason direct contact would help advance the prosecution of this case to allowance, the examiner is encouraged to telephone the undersigned at the number given below.

Respectfully submitted,
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